

CLOSURE

ORD 7398

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Region 10  
1200 Sixth Avenue  
Seattle, Washington 98101

United States Environmental  
Protection Agency,  
  
Complainant,  
  
vs.  
  
Van Waters and Rogers,  
Division of Univar  
Corporation, ORD009227398,  
  
Respondent.

No. 1086-01-01-3008

AMENDED ANSWER TO COMPLIANCE  
ORDER

In answer to the Compliance Order issued herein, and pursuant to prior agreement with complainant allowing filing of an abbreviated answer, pending a follow-up filing within one week, respondent Van Waters and Rogers, Division of Univar Corporation, states as follows:

I. JURISDICTION

- A. In answer to Paragraph A, respondent admits the allegation.
- B. In answer to Paragraph B, respondent admits the allegation.
- C. In response to Paragraph C, respondent admits the allegations.
- D. In answer to Paragraph D, respondent admits the

AMENDED ANSWER TO COMPLIANCE ORDER -1

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USEPA RCRA



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01 first sentence. In response to the second sentence, respondent  
02 states that it is without knowledge or information sufficient to  
03 form a belief as to the truth of the allegation that the State of  
04 Oregon, Department of Environmental Quality received the stated  
05 authorization in January of 1986, and therefore denies the alle-  
06 gation. Respondent further states that it is without knowledge  
07 of information sufficient to form a belief as to the truth of the  
08 allegation that noncompliance with any requirements imposed by  
09 any approved Oregon program would, in fact, constitute a viola-  
10 tion of both state and federal requirements, and therefore denies  
11 the allegation.

12 E. In answer to Paragraph E, respondent states that  
13 it is without knowledge or information sufficient to form a  
14 belief as to the truth of the allegations, and therefore denies  
15 the allegations.

16 F. In answer to Paragraph F, respondent admits that  
17 the EPA has concluded that respondent has violated (and/or is in  
18 violation of) one or more of the requirements of RCRA Subtitle C,  
19 42 U.S.C. Chapter 82, Subchapter III and the regulations prom-  
20 ulgated thereunder. However, respondent denies that it has, in  
21 fact, violated (and/or is in violation of) one or more of said  
22 requirements.

23 II. FINDINGS OF FACT

24 A. In answer to Paragraph A, respondent admits the  
25 allegations.

26 /

AMENDED ANSWER TO COMPLIANCE ORDER -2

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01 B. In answer to Paragraph B, respondent admits the  
02 allegations.

03 C. In answer to Paragraph C, respondent admits that  
04 the referenced notice of violation and intent to assess civil  
05 penalty was issued, but denies any actual violation.

06 D. In answer to Paragraph D and Subparagraphs D.1  
07 through D.3, respondent denies the allegations. Respondent  
08 further states that no spills have occurred at the hazardous  
09 waste storage "facility", as that term is defined in 40 CFR  
10 260.10. Any spills have occurred at the factory, which is not  
11 included within the "facility" for purposes of RCRA 3008. In  
12 spite of the foregoing denial, and without admitting any vio-  
13 lation of OAR or CFR requirements, respondent submits with and  
14 attaches to this Amended Answer a new revised Closure Plan dated  
15 August 22, 1986. The attached new revised Closure Plan comports  
16 with all OAR and CFR requirements relative to closure.

17 E. In answer to Paragraph E, respondent denies the  
18 allegations. Respondent states that the section entitled "Closure  
19 Activities" of the May 1986 Closure Plan, paragraph I-1b includes  
20 an estimate that the year of closure will be 1986; and the sec-  
21 tion entitled "Closure Schedule" gives a schedule for closure.  
22 See, also, the attached new revised Closure Plan.

23 III. CONCLUSIONS OF LAW

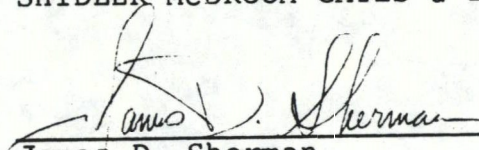
24 Respondent denies that it has violated OAR 340-105-  
25 010(6)(b), or RCRA Subtitle C., 42 U.S.C. Chapter 82, Subchapter  
26 III. Accordingly, respondent denies that issuance of the Com-  
AMENDED ANSWER TO COMPLIANCE ORDER -3


01 pliance Order is authorized by RCRA Section 3008(a), 42 U.S.C.  
02 Section 6928(a).

03 WHEREFORE, respondent hereby requests a hearing to  
04 review the EPA Regulatory Order entered herein, and requests an  
05 informal settlement meeting to discuss the administrative actions  
06 taken by the EPA herein.

07 DATED this 25 of August, 1986.

08 SHIDLER McBROOM GATES & LUCAS

09   
10 James D. Sherman

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12 James L. Fletcher

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14 Of Attorneys for Respondent  
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CLOSURE PLAN

VAN WATERS & ROGERS  
PORTLAND HAZARDOUS WASTE STORAGE FACILITY  
(EPA ID NO. ORD 009227398)

VAN WATERS AND ROGERS  
3950 NW Yeon  
Portland, Oregon 97210

Prepared By:

SRH ASSOCIATES, INC.  
123 NE Third Ave. Suite 230  
Portland, Oregon 97214

August 22, 1986

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## PREFACE

Presented herein is a closure plan and estimate of closure costs for the hazardous waste storage facility at Van Waters and Rogers' Portland plant, revised as of August, 1986. As defined in Title 40 Code of Federal Regulations (40 CFR) Part 260.10, the term "facility means all contiguous land, structures and other appurtenances on the land used for treating, storing or disposing of hazardous waste" except as exempted under the provisions of 40 CFR 265.1(c)(6) involving recycling facilities. As such, this plan addresses the closure of the area of the plant site used for hazardous waste storage activities (the facility), which is defined in the Part A RCRA permit application which Van Waters and Rogers (VWR) submitted to the Department of Environmental Quality (DEQ) on September 26, 1980, and later modified, with submittal on July 13, 1981.

This closure plan and cost estimate is submitted in accordance with the requirements of 40 CFR 122.25 (a)(13), 265.111 through 265.115, 265.142 and 265.143, and Oregon Administrative Rules (OAR) Divisions 104, 105 and 106. The plan identifies the steps that will be necessary to completely close the facility at the end of its intended operating life, or at anytime before. A post-closure plan is not required because this is not a hazardous waste disposal facility, and all wastes will be removed at closure.

Any modification of existing facility equipment, structures, instruments or procedures related to management of the facility will result in VWR submitting an updated Closure Plan for approval by the U.S. Environmental Protection Agency (EPA) and the DEQ.

Submitted concomitantly to the EPA and DEQ with this plan is a Monitoring, Analysis and Testing Plan for investigation of past practices (spills) at the VWR plant. The Monitoring, Analysis and Testing Plan was required by a RCRA Section 3013 order issued July 13, 1986. Sampling and analysis of ground water, if necessary as a part of closure of the hazardous waste storage facility, will be accomplished by implementation of the Monitoring, Analysis and Testing Plan, and details of these activities are provided in that document, and incorporated herein by reference.

## 1.0 CLOSURE PERFORMANCE STANDARD

In order to close the VWR hazardous waste storage facility, this closure plan has been designed in a manner that:

- (a) minimizes or eliminates the need for further maintenance, and
- (b) controls, minimizes or eliminates, to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous waste constituents, leachate, contaminated rainfall, or waste decomposition products to the ground or surface waters, or to the atmosphere.

As detailed in Section 3.0 of this plan, all hazardous wastes in storage at the facility will be removed and processed at the VWR plant, sent to a recycling facility, or disposed of at a licensed hazardous waste disposal facility. Sampling and analysis will take place to determine if hazardous waste constituents remain in or on the structures or materials at the facility, or have migrated from the storage facility confines. Contaminated soil and concrete requiring cleanup will be treated on-site by an approved methodology or disposed of at a licensed hazardous waste disposal facility. Once closure activities are completed and the analytical results are satisfactory, certification will be made by VWR and an independent, registered professional engineer to the EPA and DEQ that the facility has been properly closed.

The following sections of this closure plan present, in detail, the efforts to be made during closure by VWR to satisfy this closure performance standard.

## 2.0 MAXIMUM WASTE INVENTORY

At any given time, the maximum amount of hazardous waste in storage at the facility is 1,000 fifty-five gallon drums. Normally 160 drums of still bottoms would result from processing this amount of solvent at the VWR plant site.

### 3.0 CLOSURE ACTIVITIES

Hazardous waste activity at the VWR hazardous waste storage facility consists of the storage of drums containing spent solvents that are to be processed in the still located at the VWR plant site. The hazardous wastes known to have been stored at the facility are 1,1,1-trichloroethane, trichloroethylene, methylene chloride and tetrachloroethylene. As a part of the closure activities to be conducted at the facility, all of the hazardous wastes in storage will be:

- 1) processed in the still with the resultant residues (bottoms) placed in drums and forwarded to a licensed hazardous waste disposal facility, or
- 2) if on-site processing of the hazardous waste in storage cannot be accomplished, the material will be sent to an approved off-site recycler.

Following removal of all of the hazardous wastes in storage at the facility, the concrete pad will be decontaminated and tested. In areas where visual inspection of the concrete pad indicates a potential pathway for migration of hazardous wastes, due to cracks or deformities, soil sampling and analysis will occur. If levels of contamination in excess of background levels are found, ground water sampling and analysis will occur. Contaminated materials will be tested on-site, or removed and disposed of according to the regulations.

#### 3.1 Waste Removal

The stored hazardous wastes will be distilled in the still adjacent to the hazardous waste storage facility at the VWR plant site. Residues (bottoms) from the still will be disposed of at a licensed hazardous waste disposal facility. In the event that use of the still is not feasible, or if the still is non-functional, the waste in storage will be transferred to a recycling facility for processing.

#### 3.2 Decontamination

Once complete removal of the hazardous waste in storage at the facility has been accomplished, decontamination of the facility will begin. Steam cleaning will be used to remove from the concrete pad residues resulting from hazardous waste storage

activities. The wastes known to have been stored on the concrete pad consist of chlorinated volatile organics, the residues of which, due to their volatility and partial solubility in water, should be released from the concrete pad with the application of steam heat. The resulting wash water will be collected by interdicting the flow between the pad and the natural sump which was designed as a catch basin and recovering the liquids in a trap. The liquids will then be pumped into drums.

The rinsate will be sampled and analyzed for the hazardous wastes known to have been stored at the facility (1,1,1-trichloroethane, trichloroethylene, methylene chloride and tetrachloroethylene). If excessive levels of these wastes are detected, decontamination water will be treated and disposed of in a proper manner. It is estimated that the volume of water resulting from decontamination will be approximately 500 gallons.

### 3.3 Sampling and Analysis

In order to "clean close" the facility, verification must be obtained that complete decontamination of the concrete pad has occurred and that no hazardous waste remains at or has migrated from the facility. This verification will be accomplished by the sampling and analysis of the concrete pad, the soil beneath the hazardous waste storage facility and, if necessary, the ground water under and in the vicinity of the facility. All sampling will be performed in accordance with the procedures specified in EPA Publication SW-846, "Test Methods for Evaluating Solid Waste, Physical and Chemical Methods." Split samples will be taken at each sample location and preserved by refrigeration to allow for verification of results and, if necessary, additional, more definitive testing.

3.3.1 Concrete Sampling. After steam cleaning the pad, six samples of the concrete, chosen from six randomly selected locations on the pad, will be taken using a hammer and chisel. Sites will be selected by establishing a grid on the pad and selecting coordinants of sampling points through use of a random number table or program. Homogenized portions of each of these samples will be combined to form one composite sample which will be analyzed for the hazardous waste constituents listed in Appendix VII of 40 CFR, Part 261. If any amount of these wastes is detected in the sample, additional decontamination activity, again using steam, will be performed. Sampling will then be repeated at six additional randomly selected locations on the sampling grid on the concrete pad, with similar analytical procedures.

3.3.2 Soil Sampling. Soil core sampling beneath the concrete pad will be carried out where migration was most likely to occur

(i.e. cracks in the pad). Three boring locations will be selected at locations where the concrete has deformed or cracked. These locations will be selected by visual observation, with consideration given to representative coverage of the storage area and to crack location and size.

Two samples will be taken from each boring, at the following depths below the concrete surface:

0.5 to 2.5 feet (0 feet)

5.0 to 7.0 feet (5 feet)

Homogenized portions of the 0.5 to 2.5-foot sample interval from each of the three soil borings at the facility will be combined into one sample and analyzed for the hazardous waste constituents listed in Appendix VII of 40 CFR, Part 261. Each of the samples will also be analyzed individually for the hazardous wastes known to have been stored at the facility (1,1,1-trichloroethane, trichloroethylene, methylene chloride, tetrachloroethylene), as will each of the samples from the 5.0 to 7.0-foot sample interval.

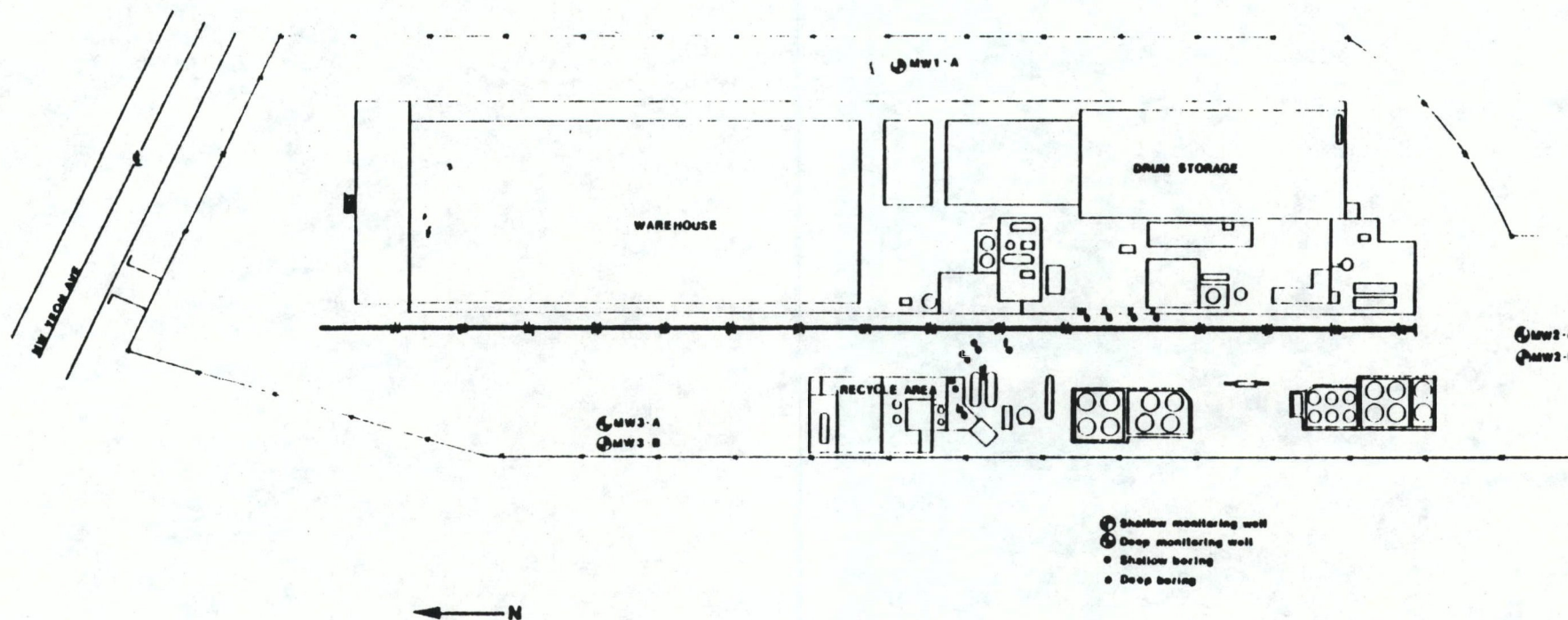
A background soil sample will also be taken at an off-facility location, coincident with the background sampling described in the Monitoring, Analysis and Testing Plan. The site selected for sampling (MW-2A), indicated on Figure 1, is in an area of the property which has not been used for the storage, use, handling or transfer of any of the target compounds and, as such, can reasonably be expected to be uninfluenced by potential contamination. Additionally, this site is readily accessible for sampling, and is on an essentially level plane with the other sample sites. Samples will be taken from this boring at the following two depths below the asphalt surface:

0.5 to 2.5 feet (0 feet)

5.0 to 7.0 feet (5 feet)

The analytical results from these background soil samples will establish the background levels to which other analytical results in this Closure Plan will be compared.

If the analytical results of the deepest sample in any of the three holes show contamination in excess of background level, the boring hole will be re-drilled and sampled at the following depths below the soil surface:



**SRH ASSOCIATES, INC.**

SCALE 1"=25'

APPROVED BY

DRAWN BY JNP

DATE 06/11/96

REVISION

**VWR SAMPLING PLAN  
SITE PLAN**

FIGURE 1

DRAWING NUMBER

10.0 to 12.0 feet (10 feet)

15.0 to 17.0 feet (15 feet)

If contamination is detected at either of these two deeper intervals, or if significant levels of contamination are found in the samples from the 0.5 to 2.5-foot and 5.0 to 7.0-foot sample intervals, then ground water sampling and analysis will be performed as detailed in Section 3.3.3.

Sampling Procedures. Soil samples will be obtained by the use of a 3-3/4 inch inside diameter (I.D.), hollow-stem auger drilling rig. This type of rig allows a two-foot split spoon sampler or Shelby tube to be lowered through the annular space in the auger flights to sample soil ahead of the drill bit. The sampler is driven into the soil using a hammer and drive shoe attached to the rig. Samples thus obtained are uncontaminated by the auger flights or other drilling equipment and accurately represent conditions at depth.

New Shelby tubes will be used for each sample obtained during the investigation. The auger flights will be decontaminated by steam cleaning between each boring to preclude the possibility of cross-contamination between holes. Steam cleaning, without the use of detergents or solvents, is recommended since the compounds of interest are volatile and slightly water soluble and therefore are expected to be freely removed from the drilling equipment by this procedure. Water generated during decontamination will be impounded in tubs or barrels for testing prior to discharge. If contaminant concentrations permit, rinsate will be discharged directly to the City of Portland sanitary sewer. If concentrations are excessive, the water will be treated to remove contaminants by adsorption with activated charcoal or other sorbent, and re-tested prior to discharge to the sanitary sewer.

Shelby tubes will be driven into the soil ahead of the augers using a 140-lb hammer. This size will permit the performance of standard penetration tests during sampling. In addition, the borings will be continuously logged for soil characterization. Shelby tubes will be field extruded directly into cleaned and labelled, one-pint, wide-mouth jars fitted with teflon cap liners. The sample bottles will be cleaned to EPA specifications (I-Chem Research or equivalent), however the usual methylene chloride rinse will be eliminated to prevent interferences from residual methylene chloride. No preservatives are required in soil samples. The samples must be transferred rapidly to minimize the loss of volatile components and jars must be filled as full as possible to minimize evaporative losses. Care must be taken to ensure that solid material does not

interfere with the hermetic seal of the sample jars. Samples must not be opened until just prior to analysis. Samples will be labelled with the required data (see Section 3.3.6), field logged for geological observations, and placed immediately on ice in portable chests for transport to the laboratory.

The borings will be abandoned and filled with grout upon completion of sampling, according to the requirements of the Oregon Water Resources Department.

Analytical Procedures. All analytical procedures will follow EPA publication SW-846, Test Methods for Evaluating Solid Waste, Physical and Chemical Methods. Analytical method number 8010, "Halogenated Volatile Organics", will be used for the chlorinated solvents. Soil samples for organic analyses will be treated using method 5030, "Purge and Trap Method" to remove contaminants and allow for proper sample analysis. The analyst is advised to ascertain that carryover from high concentration samples does not affect subsequent chromatographic injections. This may be accomplished by proper blank analysis and bake-out procedures.

The laboratory chosen to perform the analyses will have an acceptable quality control/quality assurance program in effect and will have a documented record of acceptable performance as evidenced by proper record keeping, adherence to protocols, qualifications of analysts, experience in handling samples of environmental media, participation in external laboratory evaluations, etc.

All samples' must be kept refrigerated and must be analyzed within 14 days of collection.

3.3.3 Ground Water Sampling. Sampling and analysis of ground water in the area of the facility will be initiated if soil contamination above background levels is detected from the sampling and analysis described in Section 3.3.2. Installation and sampling of wells will be accomplished as outlined in the Monitoring, Analysis and Testing Plan. Hydrogeologic and geologic data from these wells will be used, along with the soil analytical results, to ascertain if hazardous waste exists beneath the facility or has migrated from the storage facility.

It is probable that the actual placement of sampling wells will be altered significantly upon determination of the ground water flow direction and gradient and the slope and nature of the confining aquiclude. The actual wells, if necessary under this Closure Plan, will be coincident with the wells installed under the Monitoring, Analysis and Testing Plan.

The chloroalkanes being tested for tend to dissolve slowly and to settle to the aquiclude based on their densities. Additionally, the products are strong solvents with the ability to soften or solubilize some plastics. However, experience has shown that polyvinyl chloride (PVC) well casing and screen may be used successfully in groundwater investigations involving chloroalkanes. Rigid PVC well casing and screen does not employ trichloroethylene as a molecular weight inhibitor, as do many of the flexible PVC's, and does not soften upon contact with TCE or methylene chloride although ketones, esters and aromatic hydrocarbons can attack PVC readily.

As a result, 2-inch (I.D.) PVC casing will be used for the ground water wells. All well screens will consist of 0.010 inch commercially slotted, 2-inch I.D. National Sanitation Foundation potable water grade (NSF-pw) PVC. All casing and screen sections will be flush threaded to eliminate the need to use cement in well construction.

Only neutral pH grouts, such as bentonite, will be used for sealing wells below the capillary fringe. This will eliminate the use of alkaline concrete slurries that may result in localized pH depressions in the vicinity of the wells and the production of erroneous results.

Well Placement and Construction. This section is adapted from the Monitoring, Analysis and Testing Plan submitted in response to the RCRA Section 3013 order served July 11, 1986. Well placement under that plan has been designed to meet the requirements of the past practices (spills) investigation discussed in the 3013 order. If the results of soil sampling at the hazardous waste storage facility indicate a potential for ground water contamination, this placement of wells under the Monitoring, Analysis and Testing Plan has been designed to also provide adequate coverage of the ground water under and in the vicinity of the hazardous waste storage facility. Cleanup of ground water contamination, if any is required, will be accomplished in the same manner as the cleanup of any groundwater contamination resulting from the past practices.

Based on the anticipated groundwater flow beneath VWR, it is likely that at least one or more of the piezometers (MW-1A, MW-2A, MW-2B, MW-3A, or MW-3B) installed for the initial geologic and hydrogeologic characterization performed under the Monitoring, Testing and Analysis Plan may be adequately placed to serve as either up-gradient or down-gradient sample sites. One up-gradient and three down-gradient wells will be installed. Actual placement of wells will be made upon development of adequate data, and will be triggered by results of the phased soil sampling and analysis described in Section 3.3.2.

The down-gradient well spacing will be based on 150 foot intervals. If strata of higher than average permeabilities are encountered, the spacing may be reduced. Every attempt will be made to locate all wells on VWR property unless site specific conditions mandate off-site wells. Due to the tendency of the target compounds to sink in an aquifer, the screened interval of the monitoring wells will be from 6 inches below the upper surface of the confining layer underlying the uppermost aquifer to 9.5 feet above this surface.

Wells will be drilled using a continuous flight, 3-3/4 inch (I.D.), hollow-stem auger drill rig. Cluster wells will be placed as close together as reasonably possible. The auger rig was selected based on indications from nearby well logs that hard rock will not be encountered and to allow sampling and/or logging of soils as drilling takes place. Depths in excess of 150 feet are not anticipated. Since wells will not be placed in known or suspected contaminant zones, and due to the clearing action of the continuous auger flights, cross-contamination between strata should be minimized. No drilling fluids need to be used which will preserve natural conditions in the aquifer. To prevent caving and leakage, the annular space surrounding the well casing will be tremied with sand, bentonite pellets and grout as appropriate, following placement of the casing through the hollow stem of the auger.

The screened interval will be gravel packed by placing #8 washed Monterey sand into the annular space surrounding the screened interval from 0.5 feet below to 2 feet above the interval using a tremie pipe. The interval will subsequently be sealed with bentonite pellets to prevent leakage from 2 to 4 feet above the screened interval, and in the saturated zone. The remaining annulus will be filled with bentonite grout. Additionally, in any area where competency of a geologic stratum in the saturated zone is in question, an additional seal of bentonite pellets will be placed. Centralizers should be used to position the casing in the bore hole to ensure proper placement of the seals.

Wells will be developed to restore the integrity of the formation, restore formation water flow, and remove fines from the formation to produce a particulate free discharge. Development will be performed by surging the well with a bailer or air lift pump. The development must be performed with equipment free from contamination and continued until a particulate free discharge is obtained. Water generated during the development must be impounded in drums or tubs until tested for contamination and proper disposal arranged.

Well Evacuation. Because of potential pH, redox, evaporative, or dissolved gas changes that may occur in standing bore water of monitoring wells, evacuation of wells must be performed prior to obtaining a sample. In order to obtain samples representative of

in situ formation water, wells will be evacuated prior to sampling.

If possible, wells will be fully evacuated and allowed to recover at least twice prior to sampling. If the yield is sufficiently large to prevent this alternative, wells will be pumped from near the water table level until 4 to 10 well volumes of water have been removed. The pump intake will be located just below the equilibrium water level noted during pumping. Since wells to be sampled will be screened at or near the completion depth this method should produce favorable and consistent results. Additionally, this procedure would permit the use of bailers if pumps are unavailable or inoperative.

Sampling Procedures. Because of the high density of the target compounds, a sample obtained from the bottom of the well at the aquiclude is desirable. Because of this, a Kemmerer or bottom-filling bailer will be used. This type of bailer allows a sample to be obtained from the bottom of the well rather than from the top where concentrations may be expected to be lower due to the immiscibility and density of the chloroalkanes.

Bailers will be disassembled between individual wells and decontaminated. The bailer will be steam cleaned then hexane rinsed, washed with a solution of 1% trisodium phosphate and 1% sodium carbonate in tap water, rinsed with tap water and finally rinsed with distilled water. A new, clean cord will be fitted after each well is sampled.

Bailers will be carefully lowered to the bottom of the well and filled. Care will be taken to minimize agitation of the sample during collection to prevent volatilization losses. Samples for volatile chlorinated organic analyses will be immediately transferred to labelled 40 ml glass septum vials with teflon septa (I-Chem or equivalent). No air space will be permitted in the vials after filling. Samples will be immediately logged and placed on ice for shipment to the laboratory. Samples obtained for field analyses (pH, temperature, and specific conductance) will be placed into 250 ml wide mouthed glass bottles for immediate analysis.

Analytical Procedures. All analytical procedures will follow EPA publication SW-846, Test Methods for Evaluating Solid Waste, Physical and Chemical Methods. Analytical method number 8010, "Halogenated Volatile Organics", will be used for chlorinated solvent detection.

Groundwater samples for organic analyses will be treated using method 5030, "Purge and Trap Method" to remove contaminants and allow for proper sample analysis. The analyst is advised to ascertain that carryover from high concentration samples does not

affect subsequent chromatographic injections. This may be accomplished by proper blank analysis and bake-out procedures.

The laboratory chosen to perform the analyses will have an acceptable quality control/quality assurance program in effect and have a documented record of acceptable performance as evidenced by proper record keeping, adherence to protocols, qualifications of analysts, experience in handling samples of environmental media, participation in external laboratory evaluations, etc.

All samples' must be kept refrigerated and must be analyzed within 14 days of collection.

3.3.4 Quality Control. Quality control aspects of the sampling procedures discussed in Sections 3.3.2 and 3.3.3 include proper decontamination of drilling and sampling equipment between samples, selection of sample containers, sample preservation and holding times. In addition, proper field records, labelling, sample seals, chain-of-custody records, analytical requests, and shipping parameters will be adhered to.

Labels. All samples will be labelled on the container (not on the lid) with the sample number, name of collector, date and time of collection, and place of location. Labels will be filled out at the time of collection to prevent errors.

Seals. Samples will have a gummed paper seal affixed between the lid and the container to preclude tampering. Seals will be affixed such that they must be broken in order to open the sample container. The seal will be marked, at a minimum, with the sample number.

Field Log. A field log book will be kept during sample collection. Any and all relevant information will be entered into this log, which should be a bound text with sequentially numbered pages. This log should include the following information:

- purpose of sampling
- date, time and location of sample collection
- name and address of field contact
- type of sample
- suspected contaminants
- number and volume of samples taken
- sample code number
- description of sampling point and methodology
- sample distribution (i.e. name of laboratory, etc.)
- means of transportation of sample
- means of sample preservation
- references to drawings, grid points, maps, etc.
- sketches of site

field observations (color, odor, visible crystals, etc.)  
field measurements taken (pH, flammability, etc.)  
signature of person taking data

The field data will be recorded so that the sampling process can be reconstructed from this record without reference to memory or other notes.

The log book will be protected and kept in a safe place.

Chain-of-Custody. A chain-of-custody record will be prepared to trace sample possession during transport to the laboratory. This record should include:

- sample code number
- signature of the collector
- date and time of collection
- place and address of collection
- waste type
- signatures of persons involved in the chain of possession
- dates of possession by the above persons

The chain-of-custody record will allow reconstruction of the sample transportation chain from the initial sampler to the laboratory analyst.

Sample Analysis Request. A sample analysis request sheet will accompany the samples to the laboratory and should include:

- name of the person receiving the sample at the laboratory
- laboratory sample number
- date of receipt
- sample allocation
- analyses to be performed
- name and address of the receiving laboratory
- sample field code number
- sample source and other relevant field data

Shipping Requirements. Samples will be transported as rapidly as possible (usually within 1 to 2 days) to the receiving laboratory. Samples will be properly wrapped so as to comply with the U.S. Department of Transportation requirements found in Title 49, Code of Federal Regulations, Part 172.101. Samples not covered by these specific shipping requirements, will be wrapped in polyethylene bags and placed in a non-combustible absorbent, such as vermiculite, and in cans for shipment. Shipping labels, indicating the proper shipping name, the UN or NA number and the name and address of the originator will be affixed to the sample shipping container. All other pertinent

shipping information required by D.O.T., including a signature on the shipper's certification, will be complied with.

Duplicates. At least one duplicate sample will be obtained for every 10 field samples taken (10%). These samples will be analyzed to evaluate laboratory reproducibility and to control for sampling, transportation and analytical errors. Duplicates will be obtained by splitting homogenized composite samples between two different sample containers which will be treated separately throughout the remainder of the analytical process.

### 3.3.5 Evaluation/Contingencies

- 1) If test results indicate that after several decontamination steps, portions of the concrete pad remain contaminated above detectable levels of the target parameters, the affected portions of the pad will be removed by sawing through the concrete pad with a concrete saw (lubricating water will be captured and contained for future treatment). A backhoe will be used to remove the concrete to a properly-lined truck for transport and disposal at a licensed hazardous waste disposal facility.
- 2) For soil underlying the pad, if contamination above background levels is detected, the soil will be treated on-site by an approved methodology, or excavated by use of a backhoe and placed in a properly lined truck for transport and disposal at a licensed hazardous waste disposal facility.
- 3) Proper site and personnel safety plans will be produced and utilized. A specific plan will be prepared when and if contamination is discovered, once the initial analytical results are known.
- 4) As discussed in previous sections on soil and ground water sampling, a "trigger approach" will be used to activate further sampling. The soil from the first two sampling intervals (0 feet and 5 feet) will be analyzed, and if contamination above background levels exists, two deeper intervals (10 feet and 15 feet) will be sampled and analyzed. If contamination above background levels is detected at either of the two deeper sampling intervals, or if significant levels of contamination are detected in either of the two upper sampling intervals, then ground water sampling will be initiated.

#### 4.0 CLOSURE SCHEDULE

VWR will submit this plan to the EPA and the DEQ at least 180 days before the commencement of closure activities at the hazardous waste storage facility, in compliance with 40 CFR 265.112 (c). The EPA Regional Administrator will approve, modify or disapprove the plan within 90 days of receipt. VWR will maintain an on-site copy of the approved closure plan and all revisions to the plan.

Within 90 days from receipt of the final volume of hazardous waste, or within 90 days after approval of the closure plan, whichever is later, VWR will remove from the facility all hazardous wastes in accordance with the approved closure plan. VWR will complete closure activities, in accordance with the approved closure plan, within 180 days of receipt of the final volume of hazardous waste or within 180 days after approval of the closure plan, whichever is later. During the closure process, EPA and DEQ personnel will be permitted access to the facility to verify that closure is taking place according to the procedures outlined in this plan.

The expected year of closure for the hazardous waste storage facility is 1987.

##### 4.1 SUBMITTAL AND APPROVAL OF CLOSURE PLAN (180 days maximum)

- 1) Closure Plan submitted to EPA Regional Administrator for approval at least 180 days prior to commencement of closure activities
- 2) Notice given by EPA that written comments on the plan and requests for modification by the public and VWR will be accepted by EPA for a period of 30 days
- 3) EPA Regional Administrator will approve, modify or disapprove the plan within 90 days of receipt
  - a) if plan is disapproved, VWR will modify the plan or submit a new plan to the EPA Regional Administrator within 30 days
  - b) EPA Regional Administrator will approve or modify the revised plan within 60 days of receipt

#### 4.2 CLOSURE ACTIVITY (180 days maximum)

[Closure date minus 180 days]

- 1) All hazardous waste stored at the facility will be removed in accordance with the approved Closure Plan (within 90 days after receiving the final volume of hazardous waste, or within 90 days of approval of the Closure Plan, whichever is later).

[Closure date minus 90 days]

- 2) Decontamination of the concrete pad, collection and analysis of wash water.
- 3) Installation of boreholes.
- 4) Sampling and analysis of concrete pad and soil samples.

[Closure date minus 60 days]

- 5) Additional decontamination of the concrete pad, if necessary, and wash water collection and analysis.
- 6) Evaluation of test results and inspection by an independent registered professional engineer. If "clean closure" has been achieved, certification will be given by the engineer and VWR that the facility has been closed in accordance with the specifications in the approved closure plan.

[Closure date]

#### 5.0 CLOSURE COST ESTIMATE

The estimated cost to close the VWR hazardous waste storage facility is \$22,000 (1986 dollars). Table 1 lists the estimated costs by activity, including removal of waste inventory, decontamination, sampling, analysis and disposal of waste and wash waters, and closure certification. A copy of this cost estimate will be kept on file at the VWR plant and will be revised annually to reflect inflation or changes in operating procedures which may impact the cost of closure.

TABLE 1

CLOSURE COST ESTIMATE  
(Revision Date: August, 1986)

<b>I. WASTE REMOVAL - still bottom residue</b>		
A)	Disposal (160 drums x \$70/drum)	\$11,200
B)	Transportation (160 drums x \$10/drum)	1,600
C)	Loading (3 hrs. x \$50/hr)	150
	<b>SUBTOTAL - WASTE REMOVAL</b>	<b>\$12,950</b>
<b>II. DECONTAMINATION</b>		
A)	Labor (16 hrs. x \$25/hr.)	400
B)	Equipment Rental (1 day x \$400/day)	400
C)	Wash Water Disposal (500 gal) (10 drums x \$70/drum)	700
D)	Transportation (10 drums x \$10/drum)	100
	<b>SUBTOTAL - DECONTAMINATION</b>	<b>\$ 1,600</b>
<b>III. SAMPLING AND ANALYSIS</b>		
A)	Drill Rig and Labor (1 day x \$1000/day plus \$500 for mob. and demob.)	\$ 1,500
B)	Geologist (8 hrs. x \$100/hr)	800
C)	Sample Analysis-Halogenated Organics (13 samples x \$150/sample)	1,950
D)	Sample Analysis-Appendix VII (2 x \$1,200)	2,400
	<b>SUBTOTAL - SAMPLING AND ANALYSIS</b>	<b>\$ 6,650</b>
<b>IV. CLOSURE CERTIFICATION</b>		
A)	Professional Engineer (8 hrs. x \$100/hr.)	800
	<b>SUBTOTAL - CLOSURE CERTIFICATION</b>	<b>\$ 800</b>
	<b>TOTAL CLOSURE COST</b>	<b>\$22,000</b>

## 6.0 FINANCIAL ASSURANCE MECHANISM FOR CLOSURE

A closure surety bond, in the amount of \$22,000 has been obtained, and will be adjusted to reflect changes in the closure cost estimate. Additional adjustments will be made on an annual basis.

## 7.0 LIABILITY REQUIREMENTS

VWR has sufficient corporate financial reserve (the "financial test"), as described in 40 CFR 265.147(a) and 40 CFR 265.151(f) to cover sudden accidental occurrences requiring liability insurance.

## 8.0 NOTICE IN DEED AND NOTICE TO LOCAL LAND AUTHORITY

VWR operates a hazardous waste storage facility and not a disposal facility. Therefore, notification in the deed is not necessary, as required by 40 CFR 264.120, informing potential purchasers of restrictions associated with a disposal site.